

**REMARKS**

Claims 235-251, 254-263, 266-271, and 276-281 were pending in the subject application. By this Amendment, applicants have canceled claims 236, 237, 244, 245, 250-253, 258, 259, 264, 265, 267, 268, 277, 278, 280, and 281 without disclaimer or prejudice to applicants' right to pursue the subject matter of these claims in another application; and have amended claims 235, 243, 249, 254, and 266. Accordingly, upon entry of this Amendment, claims 235, 238-243, 246-249, 254-257, 260-263, 266, 269-271, 276, and 279, as amended, will be pending and under examination.

Claim 235 was amended to include features recited in now canceled claims 236 and 237. As such, the amendment raises no issue of new matter and is fully supported by the specification as filed.

Claim 243 was amended to include features recited in now canceled claims 244 and 245. As such the amendment raises no issue of new matter and is fully supported by the specification as filed.

Claim 249 was amended to include features recited in now canceled claims 250 and 251. As such the amendment raises no issue of new matter and is fully supported by the specification as filed.

Claim 254 was amended to include features recited in now canceled claims 258 and 259. As such the amendment raises no issue of new matter and is fully supported by the specification as filed.

Claim 266 was amended to include features recited in now canceled claims 267 and 268. As such the amendment raises no issue of new matter and is fully supported by the specification as filed.

Accordingly, applicants respectfully request that this Amendment

be entered.

1. Rejection under 35 U.S.C. §112, first paragraph

On page 2 of the October 20, 2003 Office Action, the Examiner rejected claims 235-251, 254-263, 266-271 and 276-281 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The Examiner alleged that the instant specification discloses two receptors, human and rat SNORF72, having the amino acid sequences of SEQ ID NOS: 4 and 25, respectively, and teaches that these are receptors for neuromedin U (NMU) neuropeptides. The Examiner then alleged that claims 235-251, 254-263, 266-271 and 276-281 are drawn to the methods of competitive binding using receptors that have above 75% (at least 76%) amino acid identity to those receptors. The Examiner also alleged that the receptors that are divergent from the receptors of the instant invention may not bind NMU neuropeptides and may bind other ligands, and the limitation "a second compound known to bind to the receptor" does not require that the divergent receptors bind NMU neuropeptides. Therefore, the Examiner alleged that the claims encompass proteins that have no known function and bind unknown ligands.

In order to expedite the prosecution of the subject application, but without conceding either the correctness of the Examiner's position or the need to amend the claims for patentability reasons, Applicants have canceled dependent claims 236, 237, 244, 245, 250-253, 258, 259, 267 and 268. Independent claims 235, 243, 249, 254 and 266 have been amended to include the features

James A. Bonini, et al.  
Serial No.:09/609,146  
Filed: June 30, 2000  
Page 15

recited in the canceled claims, specifically specific amino acid sequences of the human and rat SNORF72 receptors.

Accordingly, favorable reconsideration and withdrawal of this rejection are respectfully requested.

## 2. Rejection under 35 U.S.C. §102(e)

On page 5 of the October 20, 2004 Office Action the Examiner rejected claims 235, 238-243, 246-249, 254-256, 260-266, 269-276 and 279 as being anticipated by Elshourbagy et al., U.S. Patent No. 6,461,836, effective filing date April 10, 2000, for reasons of record in the previous Office Action, Paper No. 13, at pages 3-5. Applicants note that Paper No. 13 corresponds to the May 28, 2002 Office Action and that Paper No. 15 corresponds to the previous Office Action dated January 29, 2003. This is an obvious typographical error and for the purpose of this Response Applicant's will refer to the January 29, 2003 Office Action, Paper No. 15.

In the January 29, 2003 Office Action, the Examiner alleged that Elshourbagy et al. discloses a protein identified as human AxOR34 (SEQ ID NO: 2) that is 98.9% identical to the amino acid sequence of SEQ ID NO:4 and 79% identical to SEQ ID NO: 25 of the instant application. The Examiner also alleged that Elshourbagy et al. discloses that AxOR34 is a receptor that binds neuromedin U ligands, and that the receptor can be used to screen for compounds that bind to it using competitive binding assays, wherein binding, inhibition or activation can be measured by second messenger systems including detection of calcium or other ions and cells such as insect cells and COS cells that can be used to express the receptor. The Examiner also alleged that Elshourbagy et al. teaches that agonists and antagonists to the

James A. Bonini, et al.  
Serial No.:09/609,146  
Filed: June 30, 2000  
Page 16

receptor are encompassed in the invention, and that polypeptides of the invention can be in a formulation comprising a carrier for administration.

The Examiner acknowledged that Applicant's assertion that the parent application of Elshourbagy et al. (No. 09/435,384) did not disclose the receptor ligand (neuromedin U peptides) and that the Elshourbagy et al. patent is not entitled to the filing date of November 5, 1999, was persuasive, and the effective filing date of Elshourbagy et al. is April 10, 2000.

In view of the amendments to the claims and the Examiner's acknowledgement that there are sequence differences between the Elshourbagy et al. protein identified as human AxOR34 (SEQ ID NO: 2) and the instant NMU receptor proteins, applicants maintain that reasons for rejection under 102(e) no longer apply. Accordingly, applicants respectfully request that the rejection under 35 U.S.C. §102(e) be withdrawn.

In any event, as evidenced by the Declaration Under 37 C.F.R. §1.131 of James A. Bonini, Gabriel Lerman, Yong Quan, and Kristine L. Ogozalek, attached hereto as Exhibit A, applicants had conceived, and reduced to practice an embodiment of, the claimed invention, as recited in independent claims 235 and 243, as amended above, before April 10, 2000.

Claims 235 and 243, as amended, recite processes for determining whether a chemical compound competitively binds to a human or rat SNORF72 receptor by contacting SNORF72 receptor-expressing cells with a second chemical compound known to bind to the SNORF72 receptor, e.g. known to be an agonist of the SNORF72 receptor. The Declaration is evidence that prior to April 10, 2000, a competitive binding assay within the scope of the claims was

performed by Vincent Jorgensen at the request and under the direction of co-inventor James Bonini in the United States at the laboratories of Synaptic Pharmaceutical Corporation, assignee of record of the subject application. The notebook pages of Vincent Jorgensen show that such a competitive binding assay, specifically a scintillation proximity assay (i.e., SPA), was performed. Applicants note that notebook page 101 shows that human SNORF72 receptor (i.e. hSNORF72) was transfected into COS-7 cells and membranes were harvested from such cells prior to performing this assay. Notebook page 128 shows that a plurality of chemical compounds were tested in the assay with resulting % inhibitions ranging from 30 - 49%. Percent inhibition is defined as the ability of a second chemical compound to displace the radioligand (i.e., <sup>125</sup>I-NMU-23, see notebook pages 132 and 135).

Applicants maintain that the fact that an embodiment of claims 235 and 243 was conceived and reduced to practice prior to April 10, 2000 is sufficient to have Elshourbagy et al. removed as a reference. Applicants therefore request that Elshourbagy et al. be so removed as a reference and the claims rejected therein be deemed allowable.

### 3. Rejection under 35 U.S.C. §103(a)

On page 6 of the October 20, 2003 Office Action the Examiner rejected claims 236, 244, 250, 257, 258, 267, 277 and 280 under 35 U.S.C. §103(a) as being unpatentable over Behan et al., WO 00/22131, April 20, 2000, in view of Elshourbagy et al., U.S. Patent No. 6,461,836, and further in view of Conklin et al., U.S. Patent No. 6,383,761, filing date July 27, 1998, for reasons of record in the previous January 29, 2003 Office Action, Paper No. 15.

In the January 29, 2003 Office Action, the Examiner acknowledged that Behan et al. did not teach what the ligand for the receptor was and did not appreciate that their polypeptide was a receptor for neuromedin U neuropeptides. Applicants point out that Behan et al. do not teach or suggest methods of screening compounds that competitively bind or are antagonists of the instant receptors.

As noted above in connection with the rejection under 35 U.S.C. §102(e), applicants have amended independent claims to specifically recite the human and rat SNORF72 receptors. Applicants maintain that none of the references cited by the Examiner in support of the rejection under 35 U.S.C. §103 disclose what is being claimed by applicants. Therefore, applicants maintain that no combination of these references makes the invention obvious to one skilled in the art. In any event, the enclosed Declaration Under 37 C.F.R. §1.131 is sufficient to remove Elshourbagy et al. as a reference, thereby rendering moot the rejection under 35 U.S.C. §103(a).

Accordingly, applicants respectfully request that this ground of rejection be reconsidered and withdrawn.

#### 4. Allowable claims

Applicants thank the Examiner for the indication on page 6 of the October 20, 2003 Office Action that claims 237, 245, 251, 259, 268, 278 and 281 would be allowable if written in independent form. Applicants note that claims 237, 245, 251, 259 and 268, which recited the rat SNORF72 receptor sequence, have been incorporated into the independent claims as amended above.

In summary, in view of the amendments and remarks made above,

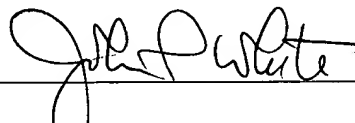
James A. Bonini, et al.  
Serial No.: 09/609,146  
Filed: June 30, 2000  
Page 19

applicants respectfully request that the Examiner reconsider and withdraw the various grounds of rejection set forth in the October 20, 2004 Office Action and allow all pending claims, namely claims 235, 238-243, 246-249, 254-257, 260-263, 266, 269-271, 276, and 279 as amended.

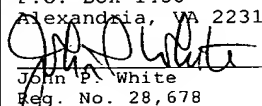
If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

No fee, other than the enclosed fee of \$420.00 for a two month extension of time, is deemed necessary in connection with the filing of this Amendment. However, if any additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited this date with the U.S. postal Service with sufficient postage as first class mail in an envelope addressed to:	
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